WHAT IS CLAIMED IS:

1. A method of generating an image transform for modifying a digital image, comprising:

a) detecting a vanishing point related to the selected image;

b) determining a preferable vanishing point location; and

c) generating an image transform based on the vanishing point location and the preferable vanishing point location.

2. The method claimed in claim 1, further comprising applying the image transform to the digital image to produce a transformed image.

3. The method claimed in claim 2, further comprising the step of generating the image transform in such a manner that a detected vanishing point of the transformed image is coincident with the preferable vanishing point location.

4. A method of detecting an amount of rotation between the vertical axes of a scene and an image of the scene, comprising:

a) detecting a set of vanishing points related to the image;

b) selecting a set of vanishing points corresponding to a vertical axis of the scene based on a predetermined criteria; and

c) using the selected vanishing points to detect the rotation of the image.

5. The method claimed in claim 4, wherein the predetermined criteria is a threshold operation to select a vanishing point that is greater than a predetermined distance from the center of the image.

6. The method claimed in claim 5, wherein the image has x' and y' axes and the predetermined criteria is:

$$|x_G| > T_1$$

OR

$|y_G| > T_1$

where the vanishing points are represented by vanishing point vectors $v_G = (x_G, y_G, z_G)$ with relation to a Gaussian sphere located on a z-axis with respect to the image at a distance f away from the image plane, f representing an approximation of the focal length of a camera lens employed to photograph the image; and T_1 is a predetermined constant; and the rotation is determined by calculating the angles between an x or y axis of the Gaussian sphere and the selected vanishing point vectors and choosing the smallest angle as the rotation.

7. The method claimed in claim 5, wherein the image has x' and y' axes and the predetermined criteria is:

$|x_G| > T_1$

OR

$|y_G| > T_1$

where the vanishing points are represented by vanishing point vectors $v_G = (x_G, y_G, z_G)$ with relation to a Gaussian sphere located on a z-axis with respect to the image at a distance f away from the image plane, f representing an approximation of the focal length of a camera lens employed to photograph the image; and T_1 is a predetermined constant; and the rotation is determined by calculating the angles between an axis of the Gaussian sphere parallel to the vertical axis of the image and the selected vanishing point vectors and choosing the smallest angle as the rotation.

8. The method claimed in claim 6, wherein $0.3 < T_1 < 1$, and the angles between the y axis and the vanishing point vector are

$$\gamma = \mathrm{sign}(x_G y_G)\cos^{-1}(v_{Gxy} \cdot [0,1,0])$$

$$\gamma = \mathrm{sign}(x_G y_G)\cos^{-1}(v_{Gxy} \cdot [0,-1,0])$$

and the angle between the x axis and the vanishing point vector is

$$\gamma = \text{sign}(x_G y_G)\cos^{-1}(v_{Gxy} \cdot [1,0,0])$$

$$\gamma = \text{sign}(x_G y_G)\cos^{-1}(v_{Gxy} \cdot [-1,0,0])$$

where $v_{Gxy} = \frac{[x_G, y_G, 0]}{\sqrt{x_G^2 + y_G^2}}$ and $sign(x_G y_G)$ is 1 if the signs of x_G and y_G are similar and $sign(x_G y_G)$ is −1 if the signs of x_G and y_G are dissimilar.

9. The method claimed in claim 7, wherein T_1=0.5.

10. An apparatus for detecting an amount of rotation between the vertical axes of a scene and an image of the scene, comprising:

a) means for detecting a set of vanishing points related to the image;

b) means for selecting a set of vanishing points corresponding to a vertical axis of the scene based on a predetermined criteria; and

c) means for using the selected vanishing points to detect the rotation of the image.

11. The apparatus claimed in claim 10, wherein the predetermined criteria is a threshold operation to select a vanishing point that is greater than a predetermined distance from the center of the image.

12. The apparatus claimed in claim 11, wherein the image has x' and y' axes and the predetermined criteria is:

$$|x_G| > T_1$$

OR

$$|y_G| > T_1$$

where the vanishing points are represented by vanishing point vectors $v_G = (x_G, y_G, z_G)$ with relation to a Gaussian sphere located on a z-axis with respect to the image at a distance f away from the image plane, f representing an approximation

of the focal length of a camera lens employed to photograph the image; and T_1 is a predetermined constant; and the rotation is determined by calculating the angles between an x or y axis of the Gaussian sphere and the selected vanishing point vectors and choosing the smallest angle as the rotation.

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13. The apparatus claimed in claim 11, wherein the image has x' and y' axes and the predetermined criteria is:

$$|x_G| > T_1$$

OR

$$|y_G| > T_1$$

where the vanishing points are represented by vanishing point vectors $v_G = (x_G, y_G, z_G)$ with relation to a Gaussian sphere located on a z-axis with respect to the image at a distance f away from the image plane, f representing an approximation of the focal length of a camera lens employed to photograph the image; and T_1 is a predetermined constant; and the rotation is determined by calculating the angles between an axis of the Gaussian sphere parallel to the vertical axis of the image and the selected vanishing point vectors and choosing the smallest angle as the rotation.

14. The apparatus claimed in claim 12, wherein $0.3<T_1<1$, and the angles between the y axis and the vanishing point vector are

$$\gamma = \text{sign}(x_G y_G)\cos^{-1}(v_{Gxy} \cdot [0,1,0])$$

$$\gamma = \text{sign}(x_G y_G)\cos^{-1}(v_{Gxy} \cdot [0,-1,0])$$

and the angle between the x axis and the vanishing point vector is

$$\gamma = \text{sign}(x_G y_G)\cos^{-1}(v_{Gxy} \cdot [1,0,0])$$

$$\gamma = \text{sign}(x_G y_G)\cos^{-1}(v_{Gxy} \cdot [-1,0,0])$$

where $v_{Gxy} = \frac{[x_G, y_G, 0]}{\sqrt{x_G^2 + y_G^2}}$ and $sign(x_G y_G)$ is 1 if the signs of x_G and y_G are similar and $sign(x_G y_G)$ is -1 if the signs of x_G and y_G are dissimilar.

15. The apparatus claimed in claim 14, wherein T_J=0.5.

16. A computer readable medium having computer executable instructions for performing the method of claim 1.

17. A computer readable medium having computer executable instructions for performing the method of claim 2.

18. A computer readable medium having computer executable instructions for performing the method of claim 3.

19. A computer readable medium having computer executable instructions for performing the method of claim 4.

20. A computer readable medium having computer executable instructions for performing the method of claim 5.

21. A computer readable medium having computer executable instructions for performing the method of claim 6.

22. A computer readable medium having computer executable instructions for performing the method of claim 7.

23. A computer readable medium having computer executable instructions for performing the method of claim 8.

24. A computer readable medium having computer executable instructions for performing the method of claim 9.